

A NEW SPECIES OF WATER PENNY BEETLE,
PHENEPS CURSITATUS, FROM CERRO DE LA NEBLINA,
VENEZUELA (COLEOPTERA: DRYOPOIDEA: PSEPHENIDAE)

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Abstract.—A new species of psephenid beetle, *Pheneps cursitatus* Spangler, from Cerro de la Neblina, Venezuela, is described, illustrated with line drawings and scanning electron micrographs, and compared to its closest relative, *Pheneps antennalis* Spangler & Steiner (1983), from Surinam. A photograph and notes on the habitat are provided.

Insect collections made during a biological survey of the plants and animals of the tepui Cerro de la Neblina, in southern Venezuela, yielded numerous new taxa, distribution records, and biological data. The new aquatic beetle described in this paper is another example of the rich and relatively unstudied fauna of the Amazon basin.

The genus *Pheneps* and two species, *P. gracilis* from Haiti and *P. cubanus* from Cuba, were described by Darlington (1936); a third species, *P. antennalis* from Surinam, was described more recently by Spangler and Steiner (1983). Although the male of *P. cubanus* is unknown, the males of *P. gracilis*, *P. antennalis*, and *P. cursitatus*, new species, are known and all have exceptionally long antennae (Figs. 1, 2) as described for the genus by Darlington.

***Pheneps cursitatus* Spangler,**

NEW SPECIES

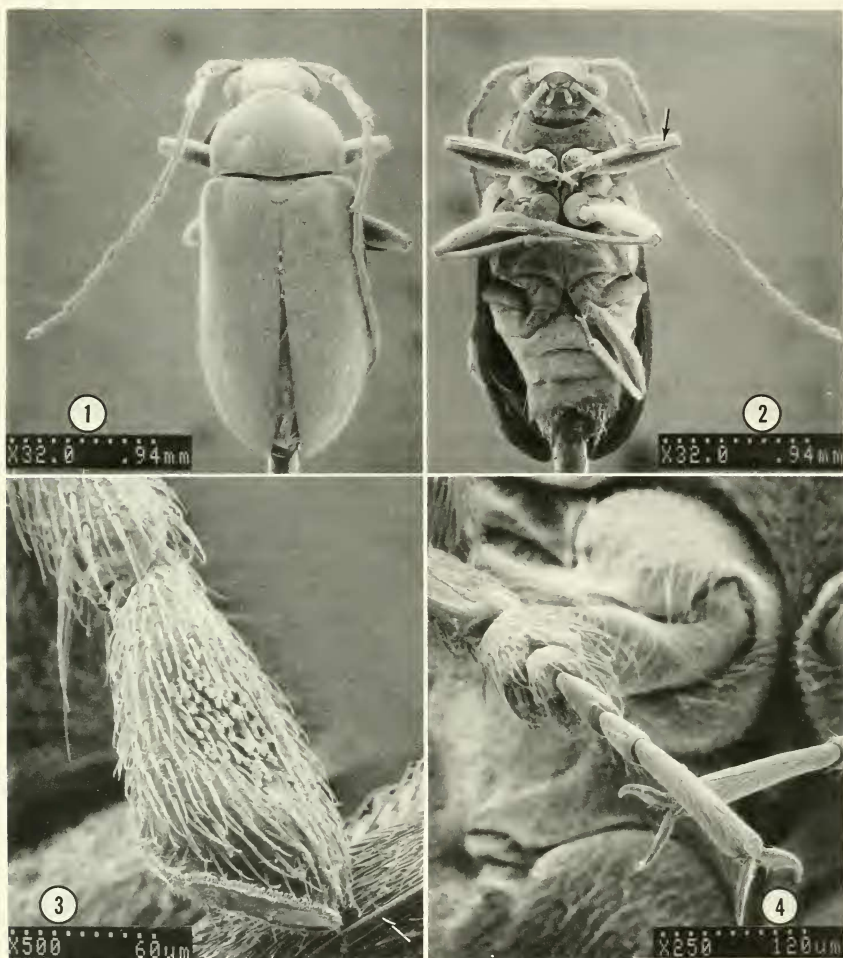
Figs. 1-12, 15

Holotype male.—**Form and size:** Body flattened; thorax narrowed anteriorly; elytra diverging slightly posteriorly, widest at about posterior three-fourths, apices rounded. Length, 2.47 mm; width, 1.31 mm.

Coloration: Covered with fine, dense,

short, recurved, golden pubescence. Head, antennal segments 3-11, pronotum, and elytra dark brown; basal two antennal segments, labium, and labial palpi yellowish brown. Ventral surface light yellowish brown except maxillary palpi, prosternum, sides of metasternum, apices of femora, and tibia gray brown. Abdomen dark gray brown except slightly yellowish medially. Tarsi yellowish brown.

Head: Almost flat behind eyes, decurved between eyes; finely microreticulate and finely punctate, more densely so anteriorly; labroclypeal suture distinctly depressed. Clypeus with anterior margin subtruncate. Labrum narrow, broadly subrectangular, and indistinctly arcuately emarginate on anterior margin. Eyes prominent, hemispherical. Antenna (Fig. 5) densely pubescent; filiform; exceptionally long, as long as length of body. Maxillary palpus (Fig. 2) 4 segmented, filiform; about three-fourths the length of antennal segments 1-3 combined; first segment shortest, about a fifth as long as second segment; second segment longest, only slightly longer than fourth segment; third segment about three-fourths as long as second segment; fourth segment slightly longer than third segment, slightly com-



Figs. 1-4. *Pheneps cursitatus*, new species, male. 1, Habitus, dorsal view. 2, Habitus, ventral view. 3, Maxillary palpus, apical segment. 4, Protarsus.

pressed laterally (Fig. 3). Labial palpus very small, 3 segmented; first segment about a third as long as second segment; second segment swollen and slightly longer than third segment; third segment partially compressed apically.

Thorax: Pronotum widest at base; discal

area densely, finely punctate; discal punctures separated by $\frac{1}{2}$ to 1 times their diameter; disc moderately convex, moderately depressed adjacent to posterolateral angles; finely and indistinctly margined ventrolaterally; anterolateral angles strongly rounded; posterolateral angles forming

right angles but slightly rounded; with apical and basal margins moderately bisinuate. Scutellum slightly wider than long, flat; finely and densely punctate; rounded posteriorly. Elytra about 3.5 times longer than pronotum and about a fourth wider at widest point than pronotum; humeri slightly gibbous; apices broadly rounded; each elytron with 5 indistinct striae on discal area paralleling elytral suture; punctures fine and very dense. Prosternum (Fig. 2) moderately short in front of procoxae; covered by plastron setae. Prosternal process narrow, keel-like; apex extending into mesosternum. Mesosternum narrow between mesocoxae, about an eighth as wide as mesocoxal width (Fig. 8); with a very narrow, median, longitudinal cleft. Metasternum behind mesocoxae abruptly and strongly raised above plane of mesosternum; with a very fine, median, longitudinal line extending along length of raised portion; surface microreticulate and finely, densely punctate. Femora robust and swollen. All tibiae very slender and each with a low but distinct carina posterolaterally (Figs. 2, 3, arrows). Mesotibiae and metatibiae each with a bifurcate carina. Protibiae and mesotibiae grooved laterally on apical three-fifths. Protarsal segments (Fig. 4) and mesotarsal segments 1 and 2 much broader than segments 3, 4, and 5 and densely pubescent ventrally; metatarsi unmodified. Tarsal claws small, slender, and sharp; each with a subbasal tooth.

Abdomen: All sterna with surface sculpture as on metasternum and covered with plastron setae. Second visible sternum strongly emarginate in medial third. Fifth visible sternum broadly emarginate along posterior margin. Sixth visible sternum broadly triangularly incised medially, resulting in 2 subtriangular lateral lobes. Seventh visible sternum rounded at apex.

Male genitalia: Bulbous basally and trilobate apically as illustrated (Figs. 11, 12).

Female.—The female differs from the male as follows. Larger size, 3.90 mm long, 1.51 mm wide. Antennae (Fig. 6) only

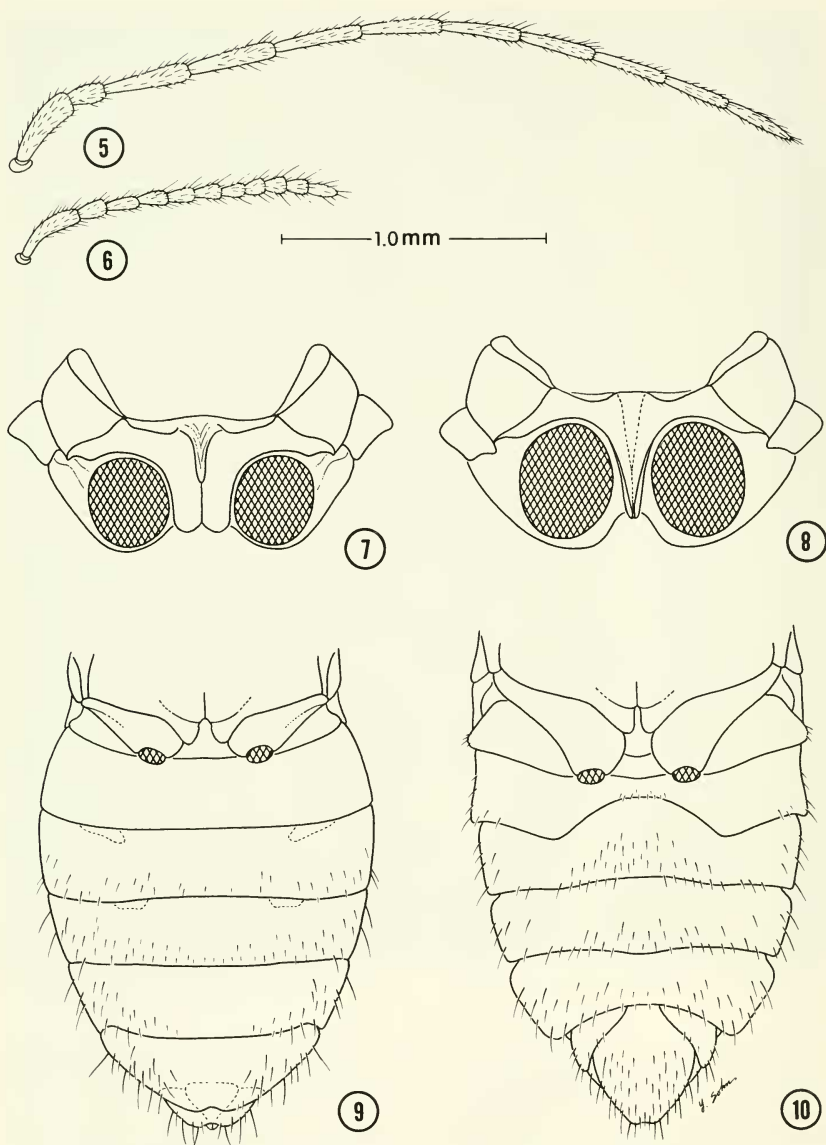
slightly longer than length of pronotum and segments submoniliform. Maxillary palpi short; about as long as combined length of basal 2 antennal segments and about half as long as palpi of male. Mesosternum wide between mesocoxae, about half as wide as mesocoxal width (Fig. 7). Visible abdominal sterna 1–5 subequal in length (Fig. 9); only fifth sternum shallowly emarginate apicomediaally; sixth sternum broadly rounded. Tarsal segments all equally very slender.

Variation.—The specimens in the type series are very similar except for the slightly variable extent of the yellowish color of the abdominal sterna and variations in length from 2.47 to 2.90 mm and width from 1.20 to 1.51 mm.

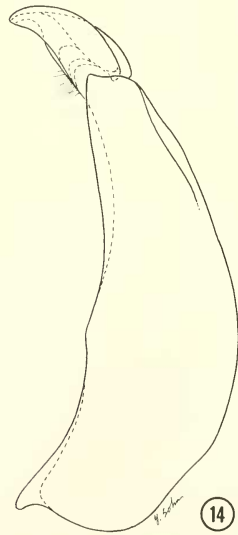
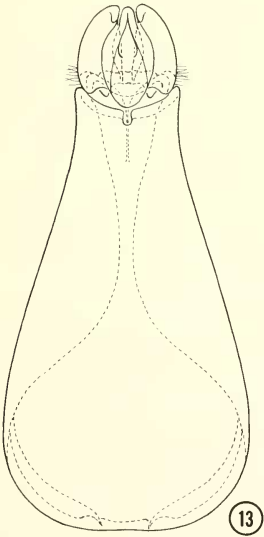
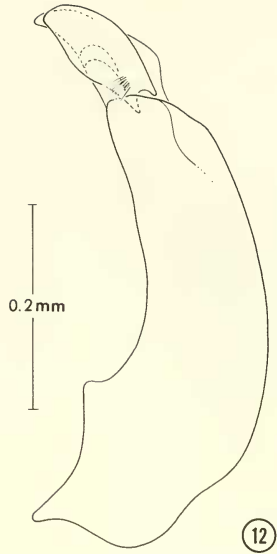
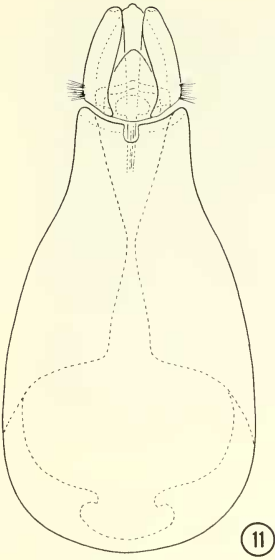
Comparative notes.—The new species is very similar to *Pheneps antennalis* Spangler & Steiner (1983). All specimens in the type series of *P. antennalis* have a reddish-brown head and pronotum which contrasts with the dark brown elytra; *P. cursitatus* is completely dark brown dorsally. Also, *P. cursitatus* is a smaller species (male length, 2.47 to 2.97 vs 3.1 to 3.8 mm). The shapes of the median lobe and parameres of the male genitalia are distinctive (Figs. 11–14). Females of *P. antennalis* are unknown.

Type-data.—Holotype ♂ and allotype: VENEZUELA: TERRITORIO FEDERAL AMAZONAS: Departamento Rio Negro: Cerro de la Neblina, Base camp, Rio Baria, 00°50'N 66°10'W, 140 m, 11 February 1985, P. J. and P. M. Spangler, R. A. Faitoute, W. E. Steiner; deposited in the National Museum of Natural History, Smithsonian Institution. Paratypes: Same data as holotype, 90 ♂, 3 ♀; same data except as follows: 27 January 1985, 2 ♀; 10 February 1985, 5 ♂; 12 February 1985, 15 ♂; 14 February 1985, 1 ♂; 20 February 1985, 1 ♂; 5 February 1985, W. E. Steiner, 1 ♀; 6 February 1985, W. E. Steiner, 1 ♂.

Paratypes will be deposited in the collections of the Instituto de Zoología Agrícola, Facultad de Agronomía, Maracay, Venezuela; American Museum of Natural His-



Figs. 5-10. *Pheneps cursitatus*, new species. 5, Antenna, male. 6, Antenna, female. 7, Mesosternum, female. 8, Mesosternum, male. 9, Abdomen, female. 10, Abdomen, male.



Figs. 11-14. 11, 12, *Pheneps cursitatus*, new species. 11, Male genitalia, dorsal view. 12, Male genitalia, lateral view. 13, 14, *Pheneps antennalis* Spangler and Steiner. 13, Male genitalia, dorsal view. 14, Male genitalia, lateral view.



Fig. 15. Biotope; riffle area in Rio Baria, T. F. Amazonas, Venezuela.

tory, New York; California Academy of Sciences, San Francisco; Canadian National Collection, Ottawa; Institut Royal de Histoire Naturelle de Belgique, Bruxelles; Museum National de Histoire Naturelle, Paris; Museo Argentina de Ciencias Naturales, Buenos Aires; Zoologische Sammlung Bayerischen Staates, Munchen; and the collection of Harley P. Brown, Norman, Oklahoma.

Etymology.—The trivial name, *cursitatus*, is derived from Latin meaning “run hither and thither” in reference to the rapid, erratic movements of these beetles over the rocks in riffles in their habitat.

Habitat.—Specimens of *Pheneps cursitatus* were collected with aerial nets or occasionally in a seine from bare emergent rocks in the riffles; others were attracted to black lights operated on the bank of the Rio Baria or in a clearing in the rainforest near the river.

In bright sunlight on February 11 and 12, we found specimens of *P. cursitatus* in rather large aggregations running over rocks in an area of shallow riffles in the Rio Baria (Fig. 15). The water level of the river was dropping rapidly during that time and tem-

perature differences were distinctly evident as we waded through the warm, shallow water into the cool, deeper water and faster current. The beetles were difficult to capture because they ran rapidly and took flight quickly when attempts were made to capture them in an aerial net. The decreasing water level and increasing temperature of the exposed rocks seems to have triggered eclosion from the pupal stage because 66% of the specimens obtained were collected during those two days. An additional 15 specimens were collected at our blacklight operated on shore beside the riffle on the evening of February 11.

Colorimetric water chemistry analyses provided the following data: pH, 4; oxygen, 12–15 ppm; hardness, 0. When these analyses were made, the day was sunny, the air temperature was 28.5°C, the water temperature was 24.5°C, and the water around the rocks where the beetles congregated was about 15 cm deep but kept getting shallower throughout the day. As the water level dropped and the rocks became exposed, the psephenid beetles kept moving to other rocks still surrounded by water at their bases. The elevation at the stream was about 120 m.

ACKNOWLEDGMENTS

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